

# PATENT ABSTRACTS OF JAPAN

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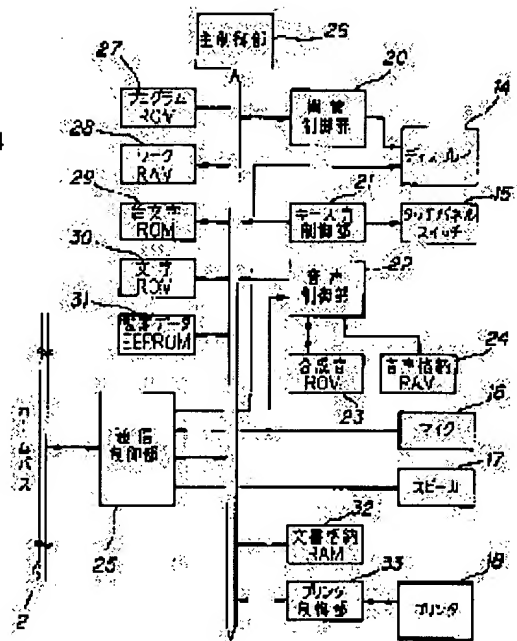
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## (54) HOME CONTROLLER

### (57)Abstract:

**PURPOSE:** To provide a home controller with excellent operation convenience for a user which is the constituting device of a home automation system and can arbitrarily be changed with an image constituting character by a user based on his use environment and taste.

**CONSTITUTION:** The home controller is constituted of a display device 14 to display an operation key, etc., a transparent touch panel device 15 arranged on the display device 14 to input the operation to the operation key on the displayed image, a communication control part 25 to communicate with other constituting device and transmit and receive the video information and voice information in a home automation system, an EEROM 31 to store the initializing data at the time of setting a device and the image constituting character data, etc., changed by a user, a document storing RAM 32 to store the prepared document or the received document and a printer 18, etc., to print out the stored document.



## LEGAL STATUS

[Date of request for examination]

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## \* NOTICES \*

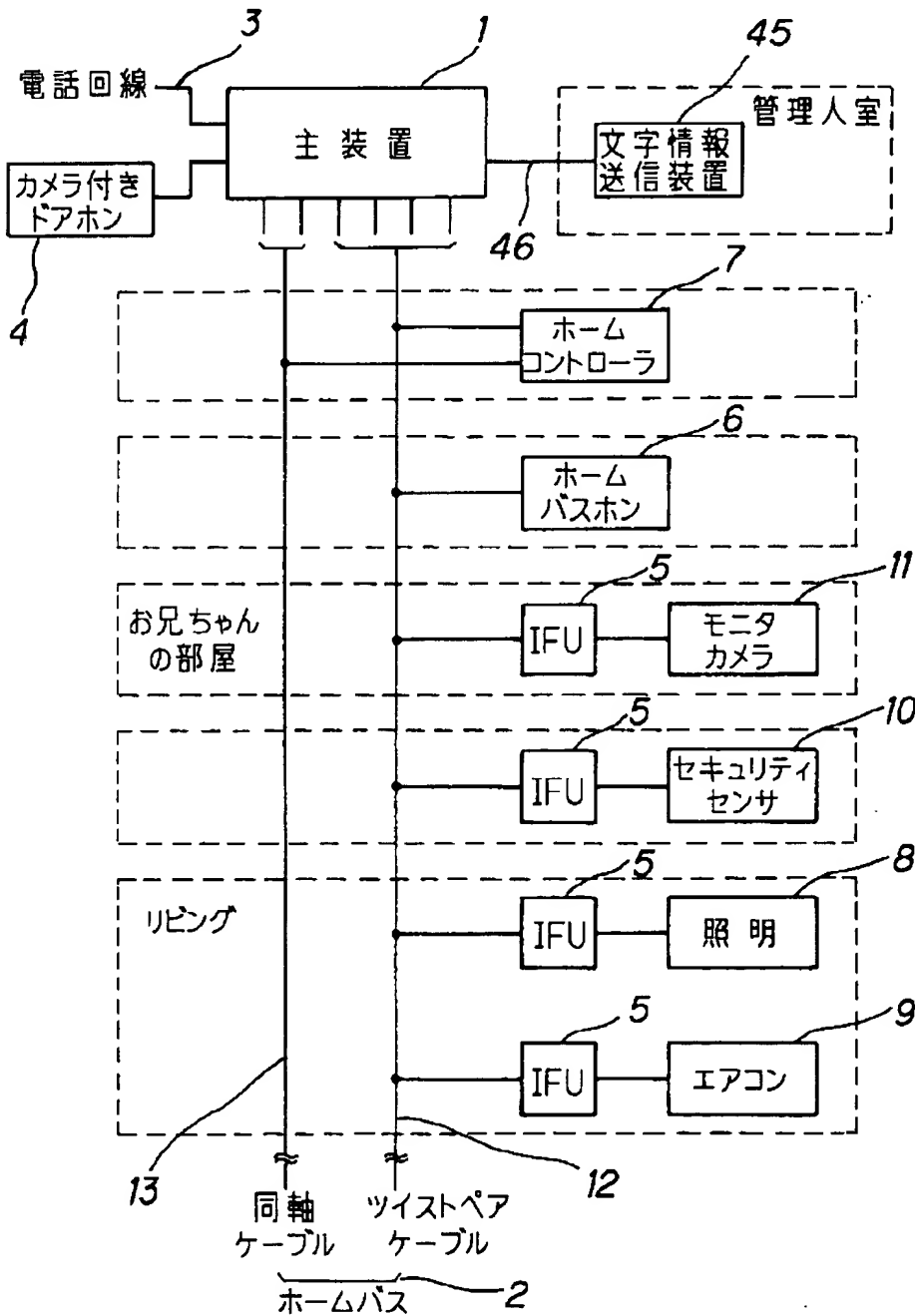
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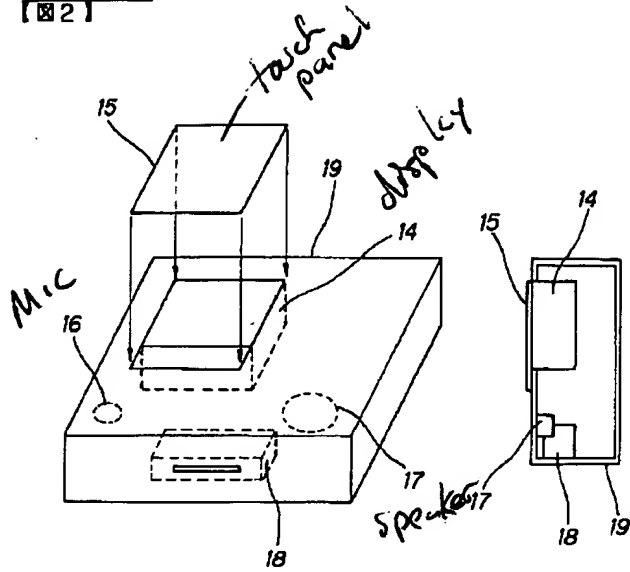
## DRAWINGS

[Drawing 1]

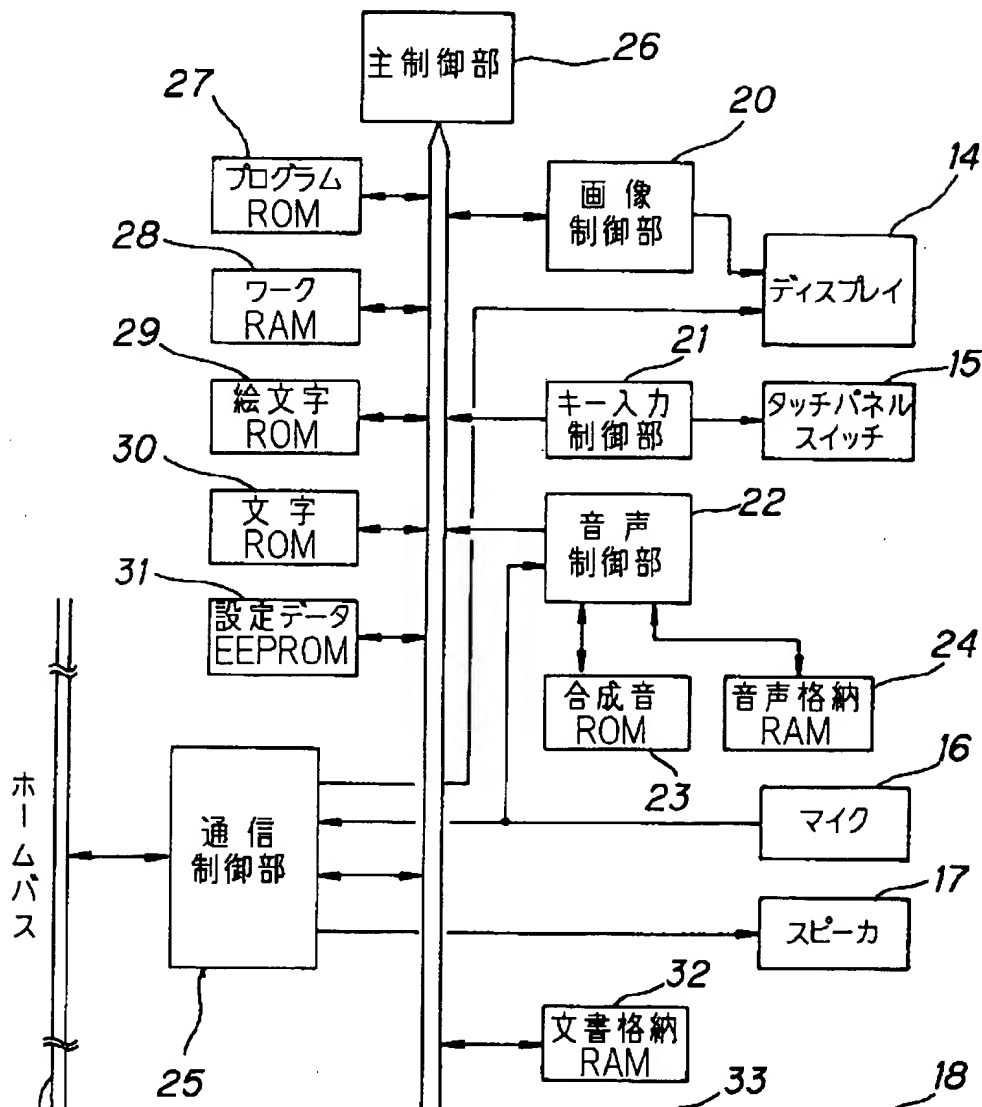
【図1】



[Drawing 2]  
[図 2]

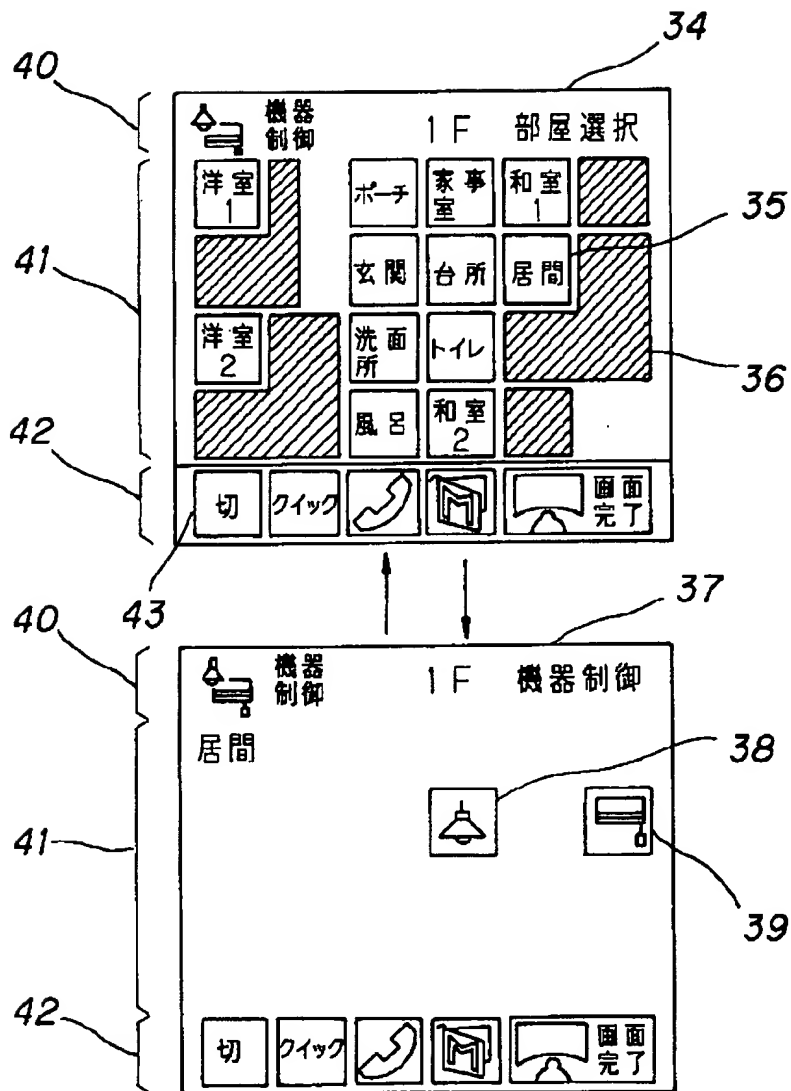


[Drawing 3]  
[図 3]



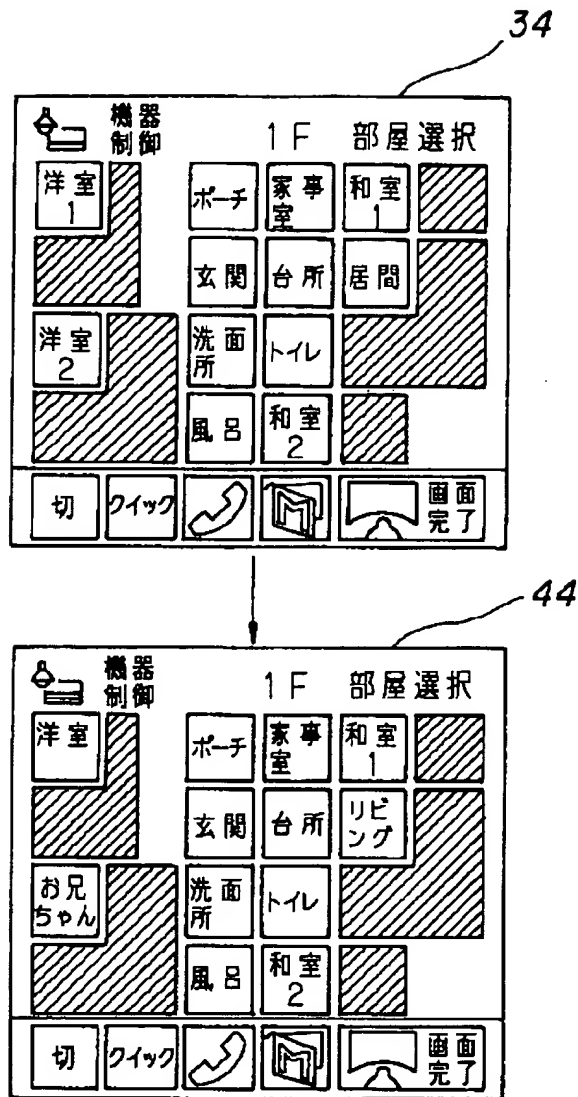
[Drawing 4]

【 図 4 】



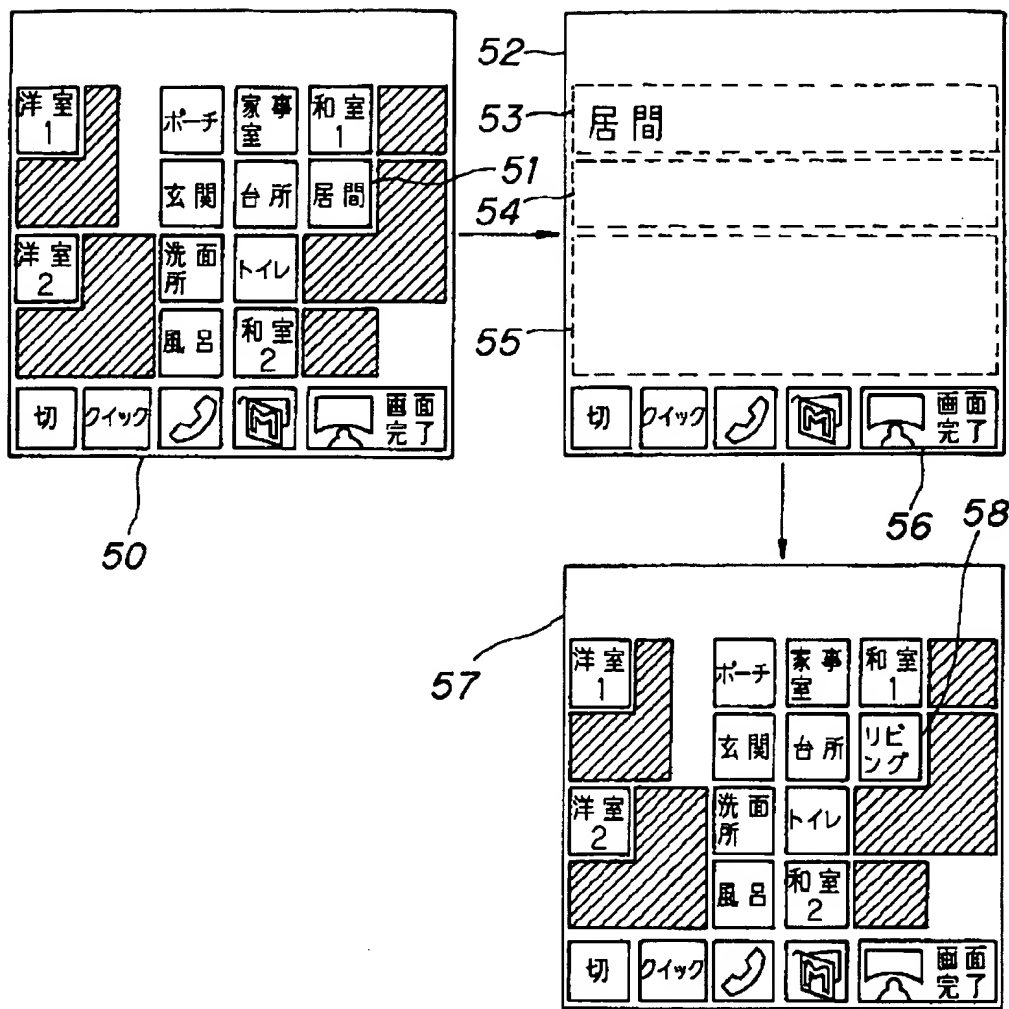
[Drawing 5]

【図5】



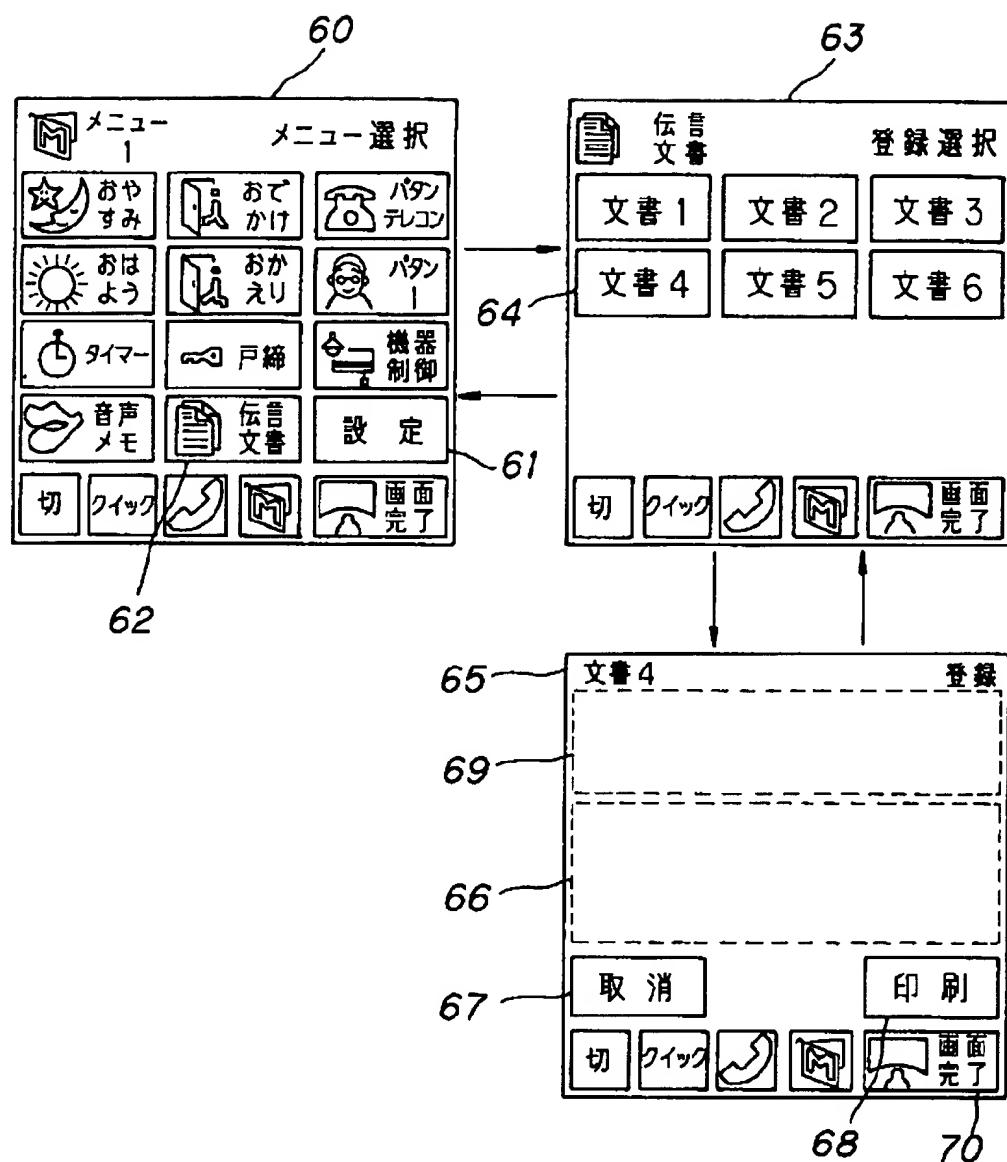
[Drawing 6]

【図6】



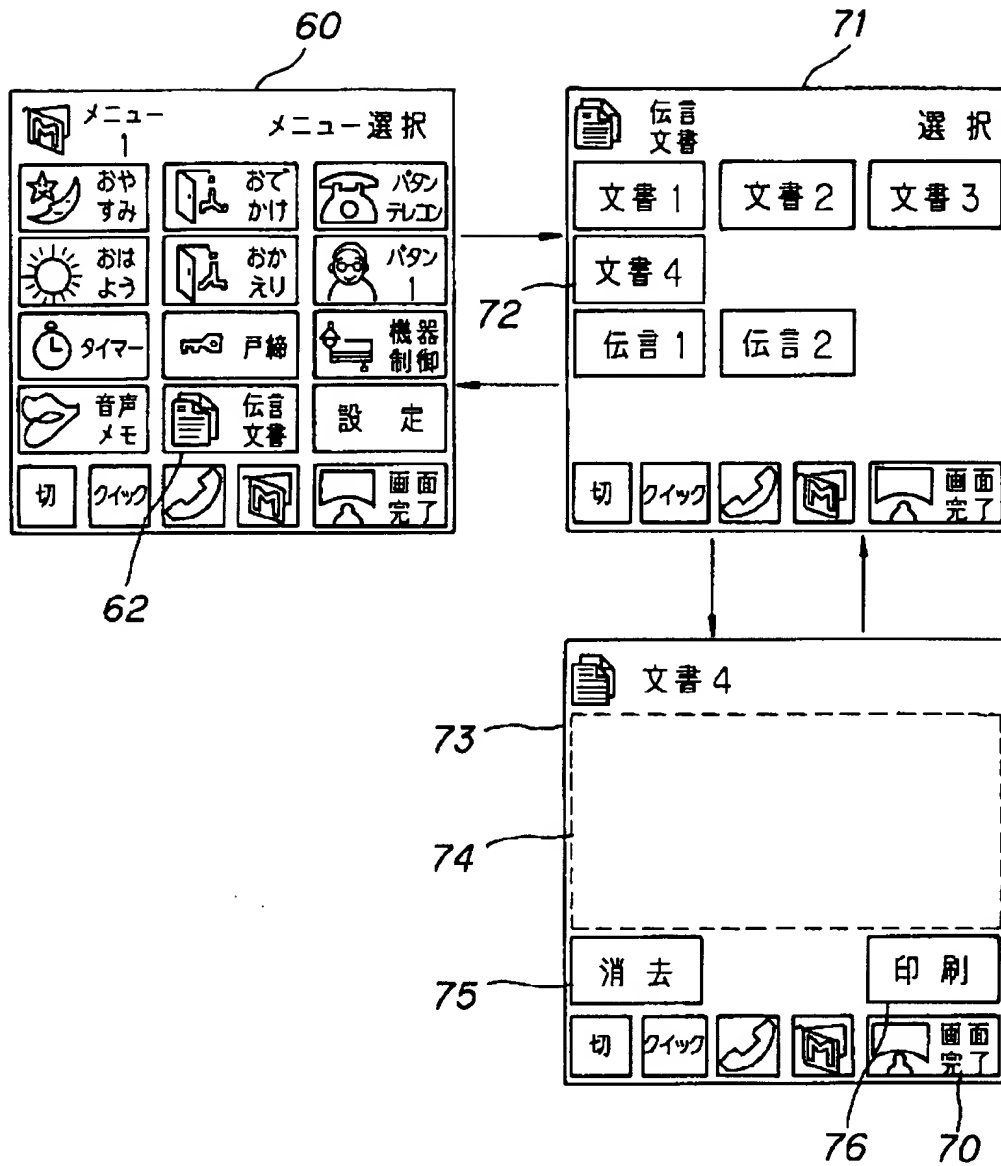
[Drawing 7]

【図7】



[Drawing 8]

【図8】



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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention has a display unit in a home automation system. By arranging a transparent touch-panel switch on the display screen of the display unit concerned, and carrying out the depression of the operation key on the screen displayed on the display unit through a transparent touch-panel switch The change of state of the controlled-system terminal equipment by having operated the function corresponding to the operation key concerned, and having performed the operation concerned etc., It is related with a suitable home controller to display an image with the various information based on the information on the various sensors by the various information reflecting the result of the operation concerned or the following screen corresponding to the operation concerned, and operation etc., an external monitor camera, etc. on a display unit.

[0002]

[Description of the Prior Art] In the screen which performs the screen title which shows that the conventional home controller is the screen which the screen currently displayed in the display screen aimed at what, or means what etc., control of a domestic device, a check, etc., the display of the floor name in which a device is located, a room name, etc. was the character expression of fixation.

[0003]

[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional home controller, the user could not but follow character expression with the above-mentioned screen title, a floor name, a room name, etc. peculiar to equipment irrespective of an operating environment, taste, etc.

[0004] Therefore, the purpose of this invention is to offer the home controller user-friendly for a user that a user can perform change and a setup for screen composition characters, such as the above-mentioned screen title, a floor name, and a room name, arbitrarily based on the taste of an operating environment and a user etc.

[0005] Other purposes of this invention are to offer the home controller user-friendly for a user that creation of arbitrary documents and registration can be performed in the main part.

[0006] Other purposes of this invention receive the alphabetic information from an external device with the transmitting function of predetermined alphabetic information, can perform discernment of this, and registration, and are by carrying out the depression of the predetermined operation key for the alphabetic information concerned to offer the home controller user-friendly for a user that it can display on a display unit.

[0007] Other purposes of this invention are to offer the home controller user-friendly for a user that the document arbitrarily received and registered from creation, registration, or the external device can be printed out.

[0008]

[Means for Solving the Problem] The picture control section for the home controller by this invention performing superimposed titles, such as an operation key to the graphic display from the operation screen display which displays the operation key to a display unit etc., a monitor camera, etc., and the above-mentioned camera image screen The display unit which performs the display of the above-mentioned picture and an image, and the transparent touch-panel switch which inputs the operation to the operation key on the displayed screen, In the key input control section which performs discernment of the state of the transparent touch-panel switch concerned, and processing, and a home automation system The communications control section which performs transmission and reception of the communication with other components and image information, and speech information, The microphone which inputs voice in case the telephone call with a home bus phone etc. is performed, and the loudspeaker which outputs voice etc. in case it talks over the telephone similarly, The voice-control section which performs generation of a synthesized speech called storing and voice guidance of a user's voice etc., ROM which stores encoded sound-source data, such as a synthesized speech, (Read Only Memory), RAM which stores the data which encoded a user's voice (RandomAccess Memory), The main-control section which controls the whole home controller, and ROM which stores the control program for performing control in the main-control section, RAM made into a working area in case a program is performed, and ROM which stores the pictorial symbol data for using for an operation key etc. in the display screen, ROM which stores the alphabetic data used for a screen title etc. in the display screen, A user changes arbitrarily the initial-setting data set up at the time of equipment installation, and the character used for the above-mentioned screen title etc. EEPROM which stores the data which require protection at the time of an equipment power supply OFF called the setting data at the time of setting up (ROM in which Electrically Erasable andProgrammable ROM electric elimination / writing is possible), RAM which stores the drawn-up document or the received alphabetic information, the

printer which prints out the document with which the above was stored, and the printer control section which performs control of this are provided.

[0009]

[Function] According to the home controller by this invention, a user can perform change and a setup for screen composition characters, such as a screen title in the display screen of a display unit, a floor name, and a room name, arbitrarily based on an operating environment, taste, etc.

[0010] According to the home controller by this invention, by choosing and pushing arbitrarily the character displayed on the display unit, creation of arbitrary documents and registration can be performed and it can display on a display unit by carrying out the depression of the predetermined operation key for the registration document concerned.

[0011] According to the home controller by this invention, the alphabetic information from an external device with the transmitting function of predetermined alphabetic information can be received, discernment of this and registration can be performed, and it can display on a display unit by carrying out the depression of the predetermined operation key for the alphabetic information concerned.

[0012] According to the home controller by this invention, the registration document arbitrarily received and registered from creation, registration, or the external device can be printed out by carrying out the depression of the predetermined operation key.

[0013]

[Example] With reference to a drawing, one example of the home controller by this invention is explained below. Drawing 1 is the home automation structure-of-a-system view which made the home controller by this invention the component.

[0014] The home automation system shown in drawing is a system based on the domestic specification HBS (home bus system).

[0015] The main unit 1 performs the surveillance and control of the system management of a home bus 2, and telephone-line 3 grade.

[0016] The intercom 4 with a camera is a monitor camera built-in interphone.

[0017] IFU5 is an interface unit and minds communication with a home bus 2 and a terminal equipment.

[0018] The home bus phone 6 is the telephone which contained IFU5.

[0019] The home controller 7 is a main controller of a system, and it has a display unit. A transparent touch-panel switch is arranged on the display unit display screen concerned. Lighting 8, control of the terminal equipment of air-conditioner 9 grade, etc. are performed by carrying out the depression of the operation key on the screen displayed on the display unit through a transparent touch-panel switch. Various information reflecting the result of the operation concerned, such as a change of state of these terminal equipments by having performed control etc., Or the centralized control of a terminal equipment and intensive surveillance are performed by displaying the image by the various information based on the various sensor information on the security sensor 10 grade by the following screen corresponding to the operation concerned, and operation and the intercom 4 with a camera, and monitor camera 11 grade.

[0020] In addition, a home bus 2 consists of four pairs of twisted-pair cables 12, and two coaxial cables 13.

[0021] Moreover, the alphabetic information sending set 45 is equipment which transmits to the home controller [ in / each dwelling unit / through the residential-building bus 46 as alphabetic information / for information which is generally transmitted by the circular notice etc. ] 7.

[0022] Now, an elder brother's room and this family's man presuppose that the room in which living and the monitor camera 11 are installed in the room in which lighting 8 and the air-conditioner 9 are installed is called.

[0023] Drawing 2 is the exterior block diagram of the home controller 7.

[0024] The display unit 14 which performs presenting of the operation screen which displays an operation key, and various information, The transparent touch-panel switch 15 arranged on the display unit 14, Similarly by carrying out the depression of the predetermined operation key to the microphone 16 which inputs voice in the cases, such as a telephone call with the intercom 4 with a camera, and home bus phone 6 grade, and the loudspeaker 17 which outputs voice etc. in the case of a telephone call It consists of a printer 18 which prints out the registration document received and registered from creation, registration, or an external device, and a main part case 19 arbitrarily.

[0025] Drawing 3 is a block diagram on the function of the home controller 7.

[0026] The above-mentioned display unit 14 and the above-mentioned transparent touch-panel switch 15, The operation screen display displayed [ key / operation / to a display unit 14 ] as the above-mentioned microphone 16 and the above-mentioned loudspeaker 17, The picture control section 20 which performs control for performing superimposed titles, such as an operation key to the intercom 4 with a camera and the graphic display from monitor camera 11 grade, and the above-mentioned camera image screen The key input control section 21 which recognizes the operation state on the transparent touch-panel switch 15, The voice-control section 22 which performs generation of a synthesized speech called storing and voice guidance of a user's voice etc., In the voice storing RAM 24 which stores the composite tone ROM 23 which stores encoded sound-source data, such as a synthesized speech, and the data which encoded a user's voice, and a home automation system The communications control section 25 which performs transmission and reception of the communication with other components and image information, and speech information, The program ROM 27 which stores the control program for performing control in the main-control section 26 which controls the home controller 7 whole, and the main-control section 26 The pictorial symbol ROM 29 which stores the pictorial symbol data for using for an operation key etc. in, the work RAM 28 and the display screen which are made into a working area in case a program is performed The

character ROM 30 which stores the alphabetic data used for a screen title etc. in the display screen A user changes arbitrarily the initial-setting data set up at the time of equipment installation, and the character used for the above-mentioned screen title etc. The setting data EEPROM 31 which store the data which require protection when the electric supply to a home controller 7 called the setting data at the time of setting up is severed It consists of a printer 18 which prints out the drawn-up document, or the document storing RAM 32 which stores the received alphabetic information and the document with which the above was stored, and a printer control section 33 which performs control of this.

[0027] Drawing 4 is drawing showing the example of change of the display screen accompanying the operation in the home controller 7 for lighting 8 or control of an air-conditioner 9.

[0028] First, if a predetermined key stroke is performed in an initial menu, the room selection screen 34 will be displayed.

[0029] The room arrangement in \*\* likens a plan, and is arranged, and the room selection screen 34 is displayed as the letter key which shows a place corresponding to each, 35 [ for example, ], (sitting room) by hatching according to the size of each place, 36 [ for example, ], to places in which the controlled-system terminal equipment is installed, such as the door, sitting room, and a kitchen.

[0030] In each place classified on the room selection screen 34, one or more controlled-system terminal equipments are installed.

[0031] The letter key 35 (sitting room) which shows a place has at least one controlled-system terminal equipment in operating state, and changes the display of one changing a color according to the case where it is said that there is nothing to operating state, and has come to be able to perform this distinction easily.

[0032] If the depression of the letter key 35 (sitting room) is carried out through the transparent touch-panel switch 15 in the room selection screen 34 concerned, the appliance control screen 37 of the corresponding sitting room will be displayed.

[0033] The pictorial symbol 38 (lighting 8) and pictorial symbol 39 (air-conditioner 9) which show a terminal equipment are displayed on the position according to the arrangement in this sitting room of each controlled-system terminal equipments, such as lighting 8 and an air-conditioner 9, supposing the plan of the sitting room where the appliance control screen 37 is actual.

[0034] If the depression of the pictorial symbol 38 (lighting 8) is now carried out through the transparent touch-panel switch 15, lighting 8 will light up or put out the light by the key input control section 21 in drawing 3 recognizing the operation concerned, and the main-control section's 26 performing processing corresponding to the operation concerned, generating a control signal, and transmitting the control signal concerned to IFUS of lighting 8 through the communications control section 25 and a home bus 2.

[0035] It will show display screen composition that the example of change of the display screen accompanying the above operation is shown, and the same is fundamentally said of the other display screen composition.

[0036] Namely, in the display screen, the screen currently displayed aimed 40 at what. Or it is the title display which shows that it is the screen which means what etc., and 41 is an operation key display from which the transparent touch-panel switch on the display screen becomes effective. And 42 is the fixed key section in which five keys always needed, such as the key 43 (OFF) which performs the display screens ON and OFF, are printed by the transparent touch-panel switch.

[0037] As now shown in drawing 5, a user shall perform change and a setup for screen composition characters, such as a screen title in the display screen, a floor name, and a room name, to the display screen 44 based on an operating environment, taste, etc. from the room selection screen 34 where the home controller 7 was displayed based on the data which it has as the initial data beforehand.

[0038] Drawing 6 is drawing showing the operation flow at the time of performing change of the aforementioned screen composition character, and a setup. If a predetermined key stroke is performed in an initial menu, the room arrangement composition character change screen 50 will be displayed. The room arrangement composition character change screen 50 has screen composition according to the room selection screen 34, and if the depression of the operation key (this example sitting room key 51) which wants to change a composition character is carried out, the character input screen 52 will be displayed. The character input screen 52 consists of the character input key sections 55 assumed as the keyboard of the character string viewport 53 before change, the after [ change ] character string viewport 54, and a personal computer. By carrying out the depression of the operation key of the character input key section 55, the character string which could input the character string and was inputted is displayed on the character string field 54 after change. After the input of a character string, if the depression of the screen completion key 56 is carried out, the character string after change is stored in the setting data EEPROM 31, and the room arrangement composition character change screen 57 reconfigured based on the information is displayed. The sitting room key 51 as which the room arrangement composition character change screen 57 was chosen on the room arrangement composition character change screen 50 is changing to the living key 58. It can consider as the display screen 44 by choosing and changing a composition character changing one by one in the same procedure.

[0039] Drawing 7 is drawing showing the operation flow at the time of performing creation of a document, and registration. In a menu screen 60, if the depression of a message / the document key 62 is carried out through the transparent touch-panel switch 15 following the setting key 61, the document registration selection screen 63 will be displayed. A registered document and a non-registered document are classified by color, and the document registration selection screen 63 is displayed. In the document registration selection screen 63, when the depression of the operation key showing a registered document is carried out, renewal of a registered document is shown, and when the depression of the operation key showing a non-registered document is carried out, new creation of a document is shown. In the document registration selection screen 63, if the depression of the operation key 64 (document 4 which is not registered in this example) showing arbitrary documents is

carried out, the document registration screen 65 will be displayed. By consisting of the monitor sections 69 of a document during creation, and carrying out the depression of the operation key of the character input key section 66, kana conversion by the alphabetic-character kana input and the Roman alphabet input can be performed, and the document registration screen's 65 being as registered as each operation key of the character input key section 66 assumed as the keyboard of a personal computer, the cancellation key 67, and the printing key 68 or the inputted character string is displayed on the monitor section 69. Moreover, a document can be printed out during creation from a printer 18 by carrying out the depression of the printing key 68. In the document registration screen 65, by carrying out the depression of the screen completion key 70, an input character string is stored in the document storing RAM 32, the document registration selection screen 63 is displayed, and the operation key showing this document is colored the color showing a registration settled in that case. Moreover, in the document registration screen 65, by carrying out the depression of the cancellation key 67, an input character string becomes invalid and regeneration of the document registration selection screen 63 is carried out. The alphabetic information transmitted to each dwelling unit through the residential-building bus 46 in this example on the other hand from the alphabetic information sending set 45 installed in the building manager office is changed into a home bus command in the main unit 1, and is transmitted to the home controller 7 through a home bus 2. By the home controller 7, if alphabetic information is received, while emitting the buzzer false sound which stored this alphabetic information in the document storing RAM 32, and was stored in composite tone ROM 23 from the loudspeaker 17 and notifying to a user, a message / document key 62 of a menu screen 60 are colored the color showing unidentified \*\*\*\*\*.

[0040] Drawing 8 is drawing showing the operation flow at the time of performing a registered document and display of a message, and printing. In a menu screen 60, a message / document selection screen 71 is displayed to carry out the depression of a message / the document key 62. A message / document selection screen 71 uses as a document alphabetic information inputted by operation of drawing 7, and the alphabetic information received through the home bus 2 from the alphabetic information sending set 45 grade is classified as a message, and it displays it. Moreover, the operation key showing a message and a document and the operation key showing content non-checked a message and a document are classified by color and displayed, and non-registered a message and a document are not displayed. [ finishing / a content check ] If the depression of the operation key 72 (this example document 4) with which a message or a document is expressed in a message / document selection screen 71 is carried out, the content screen 73 of a document which displayed the content of a document will be displayed. The content screen 73 of a character consists of the content character string 74 of a document, and the elimination key 75 and the printing key 76, and can print out the content character string of a document from a printer 18 by carrying out the depression of the printing key 76. In the content screen 73 of a document, by carrying out the depression of the screen completion key 70, a message / document selection screen is displayed and the operation key showing this document is colored the color showing a content check settled in that case. Moreover, by carrying out the depression of the elimination key 75, this document is eliminated and a message / document selection screen is displayed.

[0041]

[Effect of the Invention] Since the arbitrary change in the predetermined character of the character used for the screen title in the display screen of a display unit, the floor name, the room name, etc. by choosing and pushing arbitrarily the character displayed on the display unit and a setup can be performed according to this invention as explained above, a home controller user-friendly for a user can be offered.

[0042] Since it can display on a display unit by being able to perform creation of arbitrary documents, and registration and carrying out the depression of the predetermined operation key for the registration document concerned by choosing and pushing arbitrarily the character displayed to have explained above on this invention \*\*\*\*\* and the display unit, a home controller user-friendly for a user can be offered.

[0043] As explained above, according to this invention, the alphabetic information from an external device with the transmitting function of predetermined alphabetic information is received, discernment of this and registration can be performed, and since it can display on a display unit by carrying out the depression of the predetermined operation key for the alphabetic information concerned, a home controller user-friendly for a user can be offered.

[0044] Since the registration document arbitrarily received and registered from creation, registration, or the external device by carrying out the depression of the predetermined operation key can be printed out according to this invention as explained above, a home controller user-friendly for a user can be offered.

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CLAIMS

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[Claim(s)]

[Claim 1] By having a display unit, arranging a transparent touch-panel switch on the display screen of the display unit concerned, and carrying out the depression of the operation key on the screen displayed on the display unit through a transparent touch-panel switch The change of state of the controlled-system terminal equipment by having operated the function corresponding to the operation key concerned, and having performed the operation concerned etc., The various information reflecting the result of the operation concerned, or the following screen corresponding to the operation concerned, Moreover, it is a home controller in the home automation system which can display an image with the various information based on the information on the various sensors by operation etc., an external monitor camera, etc. on a display unit. By choosing and pushing arbitrarily the character displayed on the aforementioned display unit The home controller characterized by the ability to perform the arbitrary change in the predetermined character of the character used for the screen title in the display screen of a display unit, the floor name, the room name, etc., and a setup.

[Claim 2] The home controller characterized by the ability to display on a display unit by being able to perform creation of arbitrary documents, and registration and carrying out the depression of the predetermined operation key for the registration document concerned by choosing and pushing arbitrarily the character displayed on the aforementioned display unit in the claim 1 publication.

[Claim 3] The home controller characterized by the ability to display on a display unit by receiving the alphabetic information from an external device with the transmitting function of the aforementioned predetermined alphabetic information, being able to perform discernment of this, and registration in claim 2 publication, and carrying out the depression of the predetermined operation key for the alphabetic information concerned.

[Claim 4] The home controller characterized by the ability to print out a registration document by having the external output unit of a character and carrying out the depression of the predetermined operation key in claim 2 or claim 3 publication.

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[Translation done.]